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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,627	08/07/2001	Akira Tagawa	70840/56,373	2079

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EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

SAID, MANSOUR M

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/923,627

Applicant(s)
Akira Tagawa et al.

Examiner
Mansour M. Said

Art Unit
2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 7, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5 6) ☐ Other:

Art Unit: 2673

DETAILED ACTION

Drawings

1. Figures 4A-4B, 5A-5B, 6A-6B, 7A-7D, 8-9 and 10A-10B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara et al. (6,115,016; hereinafter referred to as Yoshihara) in view of Kondoh et al (6,509,887; hereinafter referred to as Kondoh).

As to claim 1, Yoshihara teaches an image display apparatus (liquid crystal display apparatus, abstract), comprising a display section including picture elements (pixel or liquid crystal cells), for modulating light transmission or reflection (abstract, column 1, lines 5-11,

Art Unit: 2673

column 2, lines 1-10 and column 2, lines 28-45); a driving section for performing an addressing scan of the picture elements in such a manner as to successively change light modulation states of the picture elements in each display frame (column 2, lines 26-44; column 4, lines 1-28; column 7, lines 44-67; column 8, lines 33-67); and a light emitting section for illuminating the display section, wherein the light emitting section is switches ON-OFF once in each display frame, the addressing scan for the picture elements is performed in the OFF state of the light emitting section in each display frame (abstract; figures 2-5; and column 2, lines 26-44; column 4, lines 1-28; column 7, lines 44-67; column 8, lines 33-67). Yoshihara does not expressly disclose that the sequence of the addressing scan is reverse every on or more display frame.

However, Kondoh (figure 15) teaches that the sequence of the addressing scan is reverse every on or more display frame (column 11, lines 25-45).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Kondoh's teaching into Yoshihara's lcd display so that eliminating brightness nonuniformity from the display screen and enabling the desired color to be displayed (column 11, lines 44-45).

As to claim 2, Kondoh (figure 15) teaches that the sequence of the addressing scan of the picture elements is reversed every display frame (column 11, lines 25-45).

As to claim 3, Yoshihara teaches that the addressing scan of the picture elements is performed on every picture element on a scanning line (abstract; figures 2-5; and column 2, lines 26-44; column 4, lines 1-28; column 7, lines 44-67; column 8, lines 33-67).

Art Unit: 2673

As to claim 5, Yoshihara teaches that a frame period of each display frame is about 1/60 seconds (column 4, lines 42-50 and column 5, lines 33-42).

As to claim 6, Yoshihara (figures 3 and 4) teaches wherein in each display frame, an ON-state period of the light emitting section is less than or equal to about 50% of a frame period (column 2, line 60 through column 3, line 15; and column 6, lines 41-67 and column 7, lines 43).

As to claim 7, Kondoh (figure 9) teaches wherein the light modulation states of all of the picture elements are reset before the start of the addressing scan of the picture elements in the display section (column 5, lines 45-62; column 8, lines 25-29 and column 9, lines 20-34).

As to claim 9, Kondoh (figure 1) discloses that each picture element includes a liquid crystal element (column 2, lines 26-44).

As to claim 10, Kondoh (figure 1) teaches wherein the light modulation state of each picture element is controlled by an active element (abstract and column 2, lines 26-44).

4. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara in view of Kondoh as applied to claim 1 above, and further in view of Ito et al. (JP 04-058708).

As to claim 4, Yoshihara and Kondoh disclose all claimed limitation but omit such as in the first period the light emitting section is an OFF state and in the second period the light emitting section is an ON state.

Art Unit: 2673

However, Ito et al. (Figure 2) fairly disclosed that the first period the light emitting section is an OFF state and in the second period the light emitting section is an ON state (see figures 1 and 2).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have Ito et al. teaching into Yoshihara's modified system to as to increase the versatility of the display device.

As to claim 8, Kondoh (figure 9) discloses that the light modulation states of all of the picture elements are reset during the first period of each display frame (column 5, lines 45-62; column 8, lines 25-29 and column 9, lines 20-34).

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara in view of Kondoh as applied to claim 1 above, and further in view of Hoshino (6,317,181 B1).

As to claim 11, Yoshihara and Kondoh disclose all claimed limitation in claim 12 except that the light emitting section is cold cathode tube.

However, Hoshino (figures 1, 6-10 and 12) disclose the light emitting (4) section is cold cathode tube (column 5, lines 22-33).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Hoshino's lcd display having a cold cathode tube light into Yoshihara's modified device so as to provide a liquid crystal display panel capable of indicating

Art Unit: 2673

sufficiently visible display even at dark locations whereon or little external light is available, and offering novelty and variation in design while ensuring a long service life of a battery used therein (column 30-38).

As to claim 12, Hoshino (figures 1, 6-10 and 12) teaches wherein the light emitting section (4) is an electroluminescent element (column 5, lines 22-33).

As to claim 13, Hoshino (figures 1, 6-10 and 12) teaches that the light emitting section (4) is a light emitting diode (column 5, lines 22-33).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Myer (3,811,751) disclose a self-illuminated liquid crystal display panel.

Sato et al. (5,712,652) disclose a liquid crystal display device.

Kuroiwa et al. (6,400,432) disclose a lcd device and electronic apparatus using the same.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Mansour M. Said** whose telephone number is **(703) 306-5411**.

The examiner can normally be reached on Monday through Thursday from 8:30 a.m. to 6:00 p.m. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Shalwala Bipin**, can be reached at **(703) 305-4938**.

Art Unit: 2673

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA, Sixth Floor (Receptionist)

8. Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer service Office
whose telephone number is (703) 306-0377.

Patent Examiner

May 16, 2003

Mansour M. Said


Amare Mengistu
Primary Examiner